## REMARKS

Reconsideration and withdrawal of the rejections of this application and consideration and entry of this paper are respectfully requested in view of the herein remarks and accompanying information, which place the application in condition for allowance.

The Examiner is thanked for indicating that the foreign priority is acknowledged, that the objections to the specification and claims were withdrawn, and that the rejections under § 112 were withdrawn.

## I. STATUS OF CLAIMS AND FORMAL MATTERS

Claims 1-3, 5, 8, 9, and 28-36 are currently under consideration. Claim 1 is amended and claim 34 is rejected without prejudice, without admission, without surrender of subject matter, and without any intention of creating any estoppel as to equivalents.

The amendment to claim 1 relates to the incorporation of the subject matter of claim 34 into claim 1. No new matter is added.

It is submitted that the claims herewith are patentably distinct over the prior art, and these claims are in full compliance with the requirements of 35 U.S.C. §112. The amendments to the claims presented herein are not made for purposes of patentability within the meaning of 35 U.S.C. §§§§ 101, 102, 103 or 112. Rather, these amendments and additions are made simply to clarify the scope of protection to which Applicant is entitled.

## II. THE REJECTION UNDER 35 U.S.C. § 103(a) IS OVERCOME

Claims 1, 3-5, 8, 9, and 28-39 were maintained as rejected under 35 U.S.C. § 103(a) as being unpatentable over Shibata et al. (J Immunol 164: 1314-21, 2000; hereinafter "Shibata") in view of Clinical Report (Pediatrics 100: 143-152, 1997) as evidenced by the specification of the present application and the Sigma Chitin powder product sheet. The rejection is respectfully traversed.

The Office Action contends that the previous arguments submitted by Applicants were not found to be persuasive, as nasal/intranasal administration is being increasingly recognized as routes for delivering drugs in allergy treatment since this route provides rapid and relatively painless drug absorption resulting in rapid central nervous system effect. According to the

Office Action, surfactants and excipients are well know in the art for nasal administration, and the active dosage of chitin microparticles of 5mg/20g in the previous invention is equivalent to 0.1mg/kg taught in Shibata.

Before discussing Applicant's response, it is thought proper to briefly state what is required to sustain such a rejection. The issue under §103 is whether the PTO has stated a case of *prima facie* obviousness. "The PTO has the burden under §103 to establish a *prima facie* case of obviousness." In re Fine, 837 F.2d 1071, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988). To satisfy this burden, the PTO must meet the criteria set out in M.P.E.P. §706.02(j):

> ...three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991).

Moreover, the obviousness analysis must comply with the statutory scheme as explained by the Supreme Court in Graham v. John Deere Co., 383 U.S. 1, 17 (1966), namely, consideration must be given to: (1) the scope and content of the prior art, (2) the differences between the prior art and the claimed invention, (3) the level of ordinary skill in the pertinent art, and (4) additional evidence, which may serve as indicia of non-obviousness.

With the above background in mind, Applicant contends that the Patent Office has failed to meet its burden of making a *prima facie* case of obviousness. The Office has failed to show that the cited references disclose each and every element of the claimed invention. Further, the Office has failed to demonstrate how the references provide sufficient teachings or motivation to be combined with knowledge available to one skilled in the art, or with each other, in order to arrive at Applicant's invention.

Firstly, Shibata and Clinical Report, either individually or together, do not teach or suggest each and every element of the instant claims. Applicant draws attention to amended claim 1, which is herein clarified to recite that the CMP preparation is "administered to a patient in a therapeutically effective amount of between 0.01 and 100mg of CMP per kg of body weight." Notably, Shibata and Clinical Report do not teach administration of CMP within this dose range. Shibata relates to the administration of chitin microparticles at a dose of 5-

8mg/mouse/day for 16 days (see page 1315, "Oral Administration of Chitin") which, given that mice weigh approximately 20g (as suggested in the Office Action), results in a dosage of 250-400mg/kg. This is at least over twice, and at most four times, the upper dosage range recited in claim 1, and is not "equivalent" as suggested in the Office Action. As such, Shibata actually teaches away from the invention of claim 1 by referring to a dosage range substantially higher than the range of the present invention. Importantly, Clinical Report does not remedy this deficiency in the teachings of Shibata. Hence, Shibata and Clinical Report do not teach or suggest each and every limitation of claim 1 and, further, do not teach or suggest each and every limitation of dependent claims 2, 3, 5, 8, 9, 28-33, 35, and 36.

In addition, one of ordinary skill in the art would not be motivated to combine the cited references in order to arrive at the instant invention. According to the Office Action, Clinical Report indicates that the nasal mucosal surface provides a route for rapid and painless drug absorption resulting in rapid central nervous system effect. Thus, this type of administration is typically associated with a systemic delivery of the drug such that the drug is distributed and is effective throughout the body. Moreover, drugs used for nasal/intranasal administration typically require a sufficient solubility. The Examiner is respectfully requested to consider and make of record the article by Merkus et al. titled "Cyclodextrins in nasal drug delivery" published in Adv Drug Deliv Rev 36: 41-57, 1999, which is cited on the accompanying Supplemental Information Disclosure Statement and PTO-1449. Merkus et al. indicates that drugs used for nasal/intranasal administration that are poorly soluble demonstrate insufficient nasal absorption.

In contrast, the present invention uses chitin microparticles which are not delivered to the patient systemically; rather, delivery occurs intranasally or by inhalation in order to deliver the chitin microparticles to the macrophages and dendritic cells present in the nasal mucosa or the upper respiratory tract and activate them to generate cytokines and an immune response that helps the treatment of the allergy (see specification, page 1, line 19 - page 2, line 2, and the Examples). Also, the chitin microparticles are essentially insoluble under physiological conditions and are thereby not absorbed by the patient by the same mechanism as conventional drugs. Clearly, one skilled in the art would not combine Shibata and Clinical Reports because, based on what is known in the art, the skilled artisan would not use the nasal/intranasal administration method for non-systemic delivery of the drug, nor presume that an insoluble drug

such as chitin microparticles could be effective when delivered through a method that traditionally requires a soluble drug form. Therefore, one would not be motivated to combine Shibata and Clinical Reports.

Reconsideration and withdrawal of the § 103(a) rejection are respectfully requested.

**REQUEST FOR INTERVIEW**

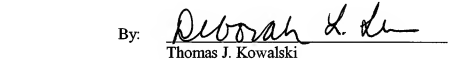
If any issue remains as an impediment to allowance, an interview with the Examiner and SPE are respectfully requested and the Examiner is additionally requested to contact the undersigned to arrange a mutually convenient time and manner for such an interview.

**CONCLUSION**

In view of the remarks and amendments herewith, the application is in condition for allowance. Favorable reconsideration of the application and prompt issuance of a Notice of Allowance are earnestly solicited. The undersigned looks forward to hearing favorably from the Examiner at an early date, and, the Examiner is invited to telephonically contact the undersigned to advance prosecution.

Respectfully submitted,

FROMMER LAWRENCE & HAUG LLP

By: 

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